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BOX 1433J, G.P.O., ADELAIDE
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COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

EIGHTH FLOOR,
DA COSTA BUILDING,
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In reply quote No.

BUILDING OPERATIONS

SOUTH AUSTRALIA

SEPTEMBER QUARTER 1962

SCOPE

This bulletin gives information about "new building" operations in South Australia; in addition to a summary for the period July 1957 to September 1962 it shows details concerning houses and flats, other buildings, employment in the industry, and dwellings in Local Government areas. The information has been compiled from returns collected from all builders of "new buildings".

DEFINITIONS

NEW BUILDINGS : Additions of £5,000 and over to existing buildings (other than houses) are included, but minor additions, alterations, repairs and renovations, and all construction activity such as railways, bridges, earthworks, water storage, etc., are excluded.

VALUE : All values shown exclude the value of land and, except for Table 4, represent the value of buildings upon completion (but see also **COMPLETIONS**). The values shown in Table 4 represent the value of work done on new buildings during the period.

COMMENCEMENTS : A building is recorded as commenced when work on the foundations has begun.

UNDER CONSTRUCTION : Once commenced, even though work on it may have been temporarily suspended, a building is classified as "under construction" until its "completion".

COMPLETIONS : A building is regarded as having been completed when the contractor has fulfilled the terms of the contract or in the case of an owner-built house when the dwelling is either completed or occupied (whichever occurs first). However, the value in all cases is that of the building as a finished project as planned.

COMMENTS

Table 1 shows that 2,487 houses were commenced and 2,374 completed during September quarter 1962, an increase of 13 commencements and a decrease of 214 completions on figures for the previous quarter. Although the number of completions was below the record of 2,588 established during the preceding quarter, it was 536 greater than for March quarter 1962.

The number of flats under construction at 30th September (410) was the highest since March quarter 1961 (436).

The considerable fluctuations from period to period in the value of "new buildings other than dwellings" in Table 3 are partly the result of the unequal incidence of individual large contracts. Table 4, which shows the value of work done on the various types of new buildings during each period, is not subject to these fluctuations.

The number recorded as employed on all jobs of builders of new buildings (Table 6) increased for the second successive quarter. The total of 12,834 at 28th September 1962 was 488 more than at 29th June 1962 and the highest since 30th March 1961 when 12,901 were reported as being employed.

As shown in Table 7 a large proportion of home building continues to be concentrated within a few local government areas. During the quarter ended 30th September last 1,053 (82.3 per cent) of dwellings completed in metropolitan local government areas were in the Municipal Corporations of Campbelltown, Enfield, Marion, Mitcham, Payneham, Port Adelaide, West Torrens, and Woodville. Of dwellings completed outside the metropolitan area 58.4 per cent were in the near metropolitan District Councils of Munno Para, Noarlunga, Salisbury, and Tea Tree Gully; completions in the Whyalla City Commission area accounted for a further 10.4 per cent.

APPENDIX A

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TABLE 1 - NEW BUILDINGS COMMENCED, COMPLETED, AND UNDER CONSTRUCTION : SOUTH AUSTRALIA

Period	Houses (a)		Flats (a)(b)		Total Dwellings(a)		Other New Buildings (c)	Total New Buildings
	No.	£'000	No.	£'000	No.	£'000	£'000	£'000
COMMENCED DURING PERIOD								
Year Ended -								
30th June 1958	6,951	22,497	499	1,084	7,450	23,581	12,078	35,659
1959	8,125	26,043	751	1,836	8,876	27,879	14,859	42,738
1960	8,909	29,784	816	2,066	9,725	31,850	17,618	49,468
1961	9,268	30,890	571	1,466	9,839	32,356	25,567	57,923
1962	8,729	29,140	605	1,668	9,334	30,808	20,938	51,746
Quarter ended -								
30th June 1961	2,286	7,516	113	237	2,399	7,753	8,144	15,897
30th Sept.	2,349	7,928	155	329	2,504	8,257	4,793	13,050
31st Dec.	1,738	5,813	181	514	1,919	6,327	3,752	10,079
31st Mar. 1962	2,168	7,226	83	215	2,251	7,441	7,329	14,770
30th June	2,474	8,173	186	610	2,660	8,783	5,064	13,847
30th Sept.	2,487	8,342	195	519	2,682	8,861	4,341	13,202
COMPLETED DURING PERIOD								
Year ended -								
30th June 1958	7,606	24,703	372	870	7,978	25,573	12,474	38,047
1959	8,143	26,260	640	1,558	8,803	27,818	16,576	44,394
1960	8,976	29,671	603	1,385	9,579	31,056	16,584	47,640
1961	9,376	31,988	887	2,462	10,263	34,450	19,416	53,866
1962	9,136	30,679	593	1,380	9,729	32,059	20,256	52,315
Quarter ended -								
30th June 1961	2,333	7,888	230	698	2,563	8,586	4,749	13,335
30th Sept.	2,144	7,229	181	442	2,325	7,671	3,734	11,405
31st Dec.	2,566	8,693	143	318	2,709	9,011	5,668	14,679
31st Mar. 1962	1,838	6,242	126	284	1,964	6,526	5,186	11,712
30th June	2,588	8,515	143	336	2,731	8,851	5,668	14,519
30th Sept.	2,374	7,930	116	344	2,490	8,274	3,685	11,959
UNDER CONSTRUCTION AT END OF PERIOD								
Year ended -								
30th June 1958	5,199	16,534	311	661	5,510	17,195	18,142	35,337
1959	5,181	16,717	422	978	5,603	17,695	16,409	34,104
1960	5,114	17,110	635	1,684	5,749	18,794	18,028	36,822
1961	5,006	16,441	319	728	5,325	17,169	24,558	41,727
1962	4,599	15,181	331	1,082	4,930	16,263	25,245	41,508
Quarter ended -								
30th June 1961	5,006	16,441	319	728	5,325	17,169	24,558	41,727
30th Sept.	5,211	17,212	293	616	5,504	17,828	25,611	43,439
31st Dec.	4,383	14,300	331	808	4,714	15,108	23,758	38,866
31st Mar. 1962	4,713	15,440	288	776	5,001	16,216	25,885	42,101
30th June	4,599	15,181	331	1,082	4,930	16,263	25,245	41,508
30th Sept.	4,712	15,608	410	1,259	5,122	16,867	26,095	42,962

(a) Excludes dwellings attached to "other new buildings".

(b) Includes "Home Units".

(c) Includes value of attached dwellings.

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TABLE 2 - NEW HOUSES: CONTRACT-BUILT AND OWNER-BUILT, SOUTH AUSTRALIA

Period	Contract-Built				Owner-Built (a)			
	Brick, Stone, etc.		Other (b)		Brick, Stone, etc.		Other (b)	
	No.	£'000	No.	£'000	No.	£'000	No.	£'000
COMMENCED DURING PERIOD								
Year ended -								
30th June 1958	4,694	15,539	829	2,208	1,149	4,060	279	690
1959	5,780	19,018	1,093	2,918	1,016	3,565	236	542
1960	7,012	23,949	1,020	2,762	717	2,679	160	394
1961	7,574	25,498	874	2,465	672	2,579	148	348
1962	7,518	25,251	623	1,752	488	1,920	105	217
Quarter ended -								
30th June 1961	1,879	6,251	251	707	128	484	28	74
30th Sept.	2,022	6,857	170	488	133	533	24	50
31st Dec.	1,416	4,821	158	431	126	483	38	78
31st Mar. 1962	1,853	6,227	171	471	120	481	24	47
30th June	2,222	7,346	124	362	109	423	19	42
30th Sept.	2,201	7,442	173	475	95	383	18	42
COMPLETED DURING PERIOD								
Year ended -								
30th June 1958	4,750	15,707	983	2,597	1,523	5,516	350	883
1959	5,515	17,968	937	2,515	1,388	5,036	303	741
1960	6,582	22,222	1,132	3,068	1,043	3,829	219	552
1961	7,486	25,788	823	2,333	902	3,457	165	410
1962	7,526	25,540	776	2,157	683	2,642	151	340
Quarter ended -								
30th June 1961	1,957	6,632	151	444	191	732	34	80
30th Sept.	1,747	5,995	213	587	140	543	44	104
31st Dec.	2,086	7,141	198	540	233	908	49	104
31st Mar. 1962	1,478	5,070	168	473	165	636	27	63
30th June	2,215	7,334	197	557	145	555	31	69
30th Sept.	2,118	7,121	138	392	101	379	17	38
UNDER CONSTRUCTION AT END OF PERIOD								
Year ended -								
30th June 1958	3,080	9,676	228	641	1,623	5,546	268	671
1959	3,345	10,832	384	1,048	1,251	4,335	201	502
1960	3,775	12,667	272	754	925	3,332	142	357
1961	3,863	12,689	323	897	695	2,549	125	306
1962	3,850	12,686	170	476	500	1,830	79	189
Quarter ended -								
30th June 1961	3,863	12,689	323	897	695	2,549	125	306
30th Sept.	4,138	13,627	280	796	688	2,535	105	254
31st Dec.	3,468	11,279	240	682	581	2,110	94	229
31st Mar. 1962	3,843	12,588	243	674	536	1,962	91	216
30th June	3,850	12,686	170	476	500	1,830	79	189
30th Sept.	3,933	13,018	205	562	494	1,835	80	193

(a) An "owner-built" house is one actually erected or being erected by the owner or under the owner's direction by sub-contract or day-labour but without the services of a contractor who is responsible for the whole job.

(b) "Other" houses are mainly of fibro-cement or weatherboard construction, e.g. included in the 927 "other" type houses completed during 1961-62 (776 contract-built and 151 owner-built) 817 were of fibro-cement construction valued at £2,185,000, and 106 of weatherboard with a value of £303,000. During September quarter 1962 there were 148 (£408,000) fibro-cement and 7 (£22,000) weatherboard houses completed.

TABLE 3 - NEW BUILDINGS OTHER THAN DWELLINGS : VALUE (a), SOUTH AUSTRALIA

Type of Building	Year Ended		Quarter Ended					
	30th	30th	30th	30th	31st	31st	30th	30th
	June	June	June	Sept.	Dec.	Mar.	June	Sept.
	1961	1962	1961	1961	1961	1962	1962	1962
COMMENCED DURING PERIOD (£'000)								
Business Premises -								
Hotels etc. & Shops	4,817	3,437	512	1,295	328	799	1,015	890
Factories	3,808	4,407	826	643	435	2,372	957	503
Other (b)	6,629	4,090	3,233	1,054	863	876	1,297	1,067
Educational & Health	7,478	6,842	3,147	1,317	1,549	2,727	1,249	1,111
All Other (c)	2,835	2,162	426	484	577	555	546	770
Total	25,567	20,938	8,144	4,793	3,752	7,329	5,064	4,341
COMPLETED DURING PERIOD (£'000)								
Business Premises -								
Hotels etc. & Shops	2,801	2,192	510	292	1,063	380	457	405
Factories	3,487	2,648	1,252	802	775	698	373	755
Other (b)	4,761	3,564	804	807	1,089	456	1,212	1,122
Educational & Health	5,778	8,615	1,212	1,097	1,395	3,152	2,971	754
All Other (c)	2,589	3,237	971	736	1,346	500	655	649
Total	19,416	20,256	4,749	3,734	5,668	5,186	5,668	3,685
UNDER CONSTRUCTION AT END OF PERIOD (£'000)								
Business Premises -								
Hotels etc. & Shops	3,958	5,200	3,958	4,960	4,224	4,642	5,200	5,748
Factories	3,371	5,143	3,371	3,199	2,871	4,560	5,143	4,899
Other (b)	5,020	5,555	5,020	5,273	5,047	5,468	5,555	5,531
Educational & Health	9,892	8,036	9,892	10,114	10,274	9,806	8,036	8,433
All Other (c)	2,317	1,311	2,317	2,065	1,342	1,409	1,311	1,484
Total	24,558	25,245	24,558	25,611	23,758	25,885	25,245	26,095

- (a) Includes values of attached dwellings.
 (b) Includes office buildings, service stations, warehouses, communication buildings, etc.
 (c) Includes defence buildings, buildings for religious and entertainment purposes, homes for aged, etc.

TABLE 4 - NEW BUILDINGS : VALUE OF WORK DONE DURING PERIOD SPECIFIED, SOUTH AUSTRALIA

Type of Building	Year Ended		Quarter Ended					
	30th	30th	30th	30th	31st	31st	30th	30th
	June	June	June	Sept.	Dec.	Mar.	June	Sept.
	1961	1962	1961	1961	1961	1962	1962	1962
£'000								
Houses (a)	27,676	27,794	6,509	7,241	6,330	6,036	7,563	8,193
Flats	2,073	1,423	476	302	327	349	445	533
Total Houses & Flats	29,749	29,217	6,985	7,543	6,657	6,385	8,008	8,726
Business Premises -								
Hotels, Boarding Houses, etc.	695	895	103	294	294	146	161	252
Shops	2,516	3,364	748	1,132	788	789	655	1,069
Factories	4,069	2,780	1,314	715	500	730	835	835
Office Premises	2,272	3,579	556	601	931	970	1,077	932
Other (b)	2,397	1,760	563	455	287	377	641	911
Educational	3,958	5,063	1,331	1,593	1,298	979	1,193	1,239
Religious	557	423	138	160	102	92	69	125
Health	1,215	1,464	216	278	356	319	511	365
Entertainment & Recreation	606	598	206	169	224	129	76	83
Miscellaneous (c)	1,828	1,606	514	510	301	409	386	341
Total Other New Buildings (Excl. Houses & Flats)	20,113	21,532	5,689	5,907	5,081	4,940	5,604	6,152

- (a) Excludes owner-built houses.
 (b) Includes service stations, warehouses, communication buildings, etc.
 (c) Includes defence buildings, homes for aged, homes for children, etc.

TABLE 5 - NEW BUILDINGS OTHER THAN DWELLINGS COMMENCED: TYPE & VALUE, SOUTH AUSTRALIA

Type of Building	Year Ended				Quarter Ended					
	30th June 1961		30th June 1962		30th June 1961	30th Sep. 1961	31st Dec. 1961	31st Mar. 1962	30th June 1962	30th Sep. 1962
	No.	£'000	No.	£'000	Number					
UP TO £25,000										
Business Premises -										
Hotels, Boarding Houses, etc.	14	190	19	231	5	6	7	2	4	6
Shops	116	659	86	647	20	23	20	20	23	31
Factories	110	1,094	89	770	15	24	14	20	31	32
Office Premises	32	287	46	531	8	10	5	12	19	8
Other (a)	124	1,158	120	1,241	26	30	18	29	43	38
Educational	131	900	114	663	45	43	31	20	20	13
Health	8	114	17	139	2	7	5	3	2	4
Religious	53	460	34	264	13	13	5	6	10	8
Entertainment & Recreation	54	330	39	259	15	11	7	11	10	5
Miscellaneous (b)	51	487	67	606	14	13	18	20	16	15
Total	693	5,679	631	5,351	163	180	130	143	178	160
OVER £25,000										
Business Premises -										
Hotels, Boarding Houses, etc.	4	450	10	666	2	3	1	1	5	3
Shops	10	3,518	23	1,893	1	10	1	3	9	7
Factories	32	2,714	26	3,637	9	5	4	9	8	5
Office Premises	14	4,274	8	1,355	5	4	1	2	1	4
Other (a)	21	910	15	963	5	3	1	3	8	3
Educational	36	4,296	40	5,621	6	8	3	15	14	12
Health	4	2,168	5	419	2	2	1	2	-	2
Religious	3	115)	-	-	1	-	3	2
Entertainment & Recreation	4	351	6	263	1	1	1	-	-	3
Miscellaneous (b)	15	1,092	15	770	1	3	4	4	4	4
Total	143	19,888	148	15,587	32	39	18	39	52	45

(a) Includes service stations, warehouses, communication buildings, etc.

(b) Includes defence buildings, homes for aged, homes for children, etc.

TABLE 6 - BUILDING EMPLOYMENT (a), SOUTH AUSTRALIA

Classification	Number of persons engaged on days specified							
	30th June 1959	30th June 1960	30th June 1961	29th Sep. 1961	20th Dec. 1961	30th Mar. 1962	29th June 1962	30th Sep. 1962
Contractors	697	721	664	648	584	618	633	643
Sub-contractors	2,300	2,602	2,257	2,320	2,292	2,263	2,411	2,493
Wage Earners	9,639	9,983	9,515	9,415	9,158	9,073	9,302	9,698
Carpenters	3,688	3,584	3,332	3,304	3,374	3,267	3,330	3,444
Bricklayers	1,923	2,225	1,905	1,914	1,933	2,002	2,076	2,227
Painters	1,058	1,220	1,093	1,115	1,138	989	1,064	1,202
Electricians	575	622	646	647	627	581	626	669
Plumbers	981	1,153	1,110	1,125	1,009	1,033	1,085	1,145
Builders' Labourers	2,207	2,183	2,018	1,989	1,837	1,981	1,891	1,905
Other	2,204	2,319	2,312	2,289	2,116	2,101	2,274	2,242
Total	12,636	13,306	12,416	12,383	12,034	11,954	12,346	12,834

(a) Covers all contractors and sub-contractors and employees of contractors, sub-contractors, and Government instrumentalities, who on the day specified were actually engaged on the construction, alteration, repair, and maintenance of buildings, but excludes persons working on owner-built houses or for contractors or sub-contractors who undertake only alterations, additions, repairs, and maintenance. Persons "actually engaged" include those temporarily laid off because of weather. Some duplication may occur as a result of frequent movement between jobs or because some persons (such as electricians) may work on several jobs which are under construction simultaneously.

TABLE 7 - NEW DWELLINGS COMPLETED (a) : LOCAL GOVERNMENT AREAS, SOUTH AUSTRALIA

Local Government Area	Year Ended		Quarter Ended					
	30th June 1961	30th June 1962	30th June 1961	31st Sep. 1961	31st Dec. 1961	31st Mar. 1962	30th June 1962	30th Sep. 1962
Metropolitan -								
Adelaide	37	12	8	1	-	6	5	2
Brighton	220	168	40	55	47	31	35	40
Burnside	325	296	86	88	85	74	49	61
Campbelltown	732	589	182	135	164	105	185	213
Colonel Light Gardens	1	-	1	-	-	-	-	1
Enfield	966	1,033	232	303	301	166	263	221
Glenelg	85	52	19	16	11	11	14	24
Henley and Grange	301	204	20	41	56	32	75	58
Hindmarsh	22	36	13	10	13	7	6	3
Kensington & Norwood	16	27	2	9	8	9	1	1
Marion	822	558	154	141	151	120	146	135
Mitcham	537	477	117	115	129	106	127	88
Payneham	190	95	47	26	25	22	22	90
Port Adelaide	319	259	125	80	85	37	57	73
Prospect	53	22	17	7	5	3	7	11
St. Peters	23	12	4	3	4	3	2	1
Thebarton	7	3	1	2	-	1	-	1
Unley	146	88	25	25	19	15	29	19
Walkerville	21	9	7	3	3	-	3	4
West Torrens	507	403	136	105	124	84	90	135
Woodville	495	438	157	104	110	82	142	98
Total	5,825	4,781	1,393	1,269	1,340	914	1,258	1,279
Country -								
Angaston	36	30	10	4	12	6	8	4
Berri	22	22	3	5	7	3	7	8
East Torrens	30	26	10	8	5	7	6	7
Encounter Bay	30	27	4	5	12	5	5	12
Gawler	73	41	10	6	17	8	10	6
Kadina Corp'n	20	10	4	-	6	1	3	-
Loxton	29	32	11	8	8	7	9	6
Meadows	33	38	9	9	10	7	12	7
Millicent	79	65	20	18	15	13	19	24
Mt. Barker	27	27	9	5	10	4	8	7
Mt. Gambier Corp'n	175	159	32	43	53	33	30	30
Mt. Gambier D.C.	12	6	2	1	2	1	2	2
Munno Para	30	157	19	15	9	42	91	64
Murray Bridge	52	40	12	2	19	10	9	4
Naracoorte Corp'n	41	28	8	8	9	4	7	2
Noarlunga	169	388	54	48	99	92	149	141
Onkaparinga	31	34	8	12	10	6	6	7
Penola	27	15	4	3	4	2	6	3
Pirie D.C.	16	3	1	1	2	-	-	2
Pt. Augusta	100	65	28	23	12	15	15	20
Pt. Elliot	21	23	7	4	9	6	4	8
Pt. Lincoln Corp'n	44	54	14	14	17	12	11	17
Pt. Pirie Corp'n	29	17	3	2	7	2	6	11
Renmark	37	32	10	6	9	7	10	5
Salisbury	1,688	1,786	447	374	537	314	561	284
Stirling	52	58	18	12	15	11	20	15
Tatiara	34	41	7	10	16	8	7	6
Teatree Gully	408	661	104	143	157	154	207	221
Victor Harbor	24	27	5	7	11	5	4	4
Whyalla City Comm.	457	455	131	127	106	124	98	127
Willunga	26	48	7	11	19	13	5	3
Other Country	622	561	167	129	151	137	144	159
Total	4,474	4,976	1,178	1,063	1,375	1,059	1,479	1,216
Total State	10,299	9,757	2,571	2,332	2,715	1,973	2,737	2,495

(a) Dwelling Units - houses and flats plus dwellings attached to "Other New Buildings".

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1. The first part of the paper is devoted to a discussion of the general properties of the system. It is shown that the system is stable and that the solution is unique. The second part of the paper is devoted to a discussion of the asymptotic behavior of the system. It is shown that the system converges to a steady state and that the convergence is exponential. The third part of the paper is devoted to a discussion of the numerical solution of the system. It is shown that the system can be solved numerically and that the numerical solution is accurate.

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